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Total Number of Pages in This Submission: 8

Application Number	09/854,393
Filing Date	05/11/2001
First Named Inventor	Horst Rumpf
Art Unit	2655
Examiner Name	Jorge L. C. Ortiz
Attorney Docket Number	DE 000076

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- ☐ Information Disclosure Statement
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- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Remarks

Enclosed is a Reply Brief that is being filed in response to the Examiner's Answer mailed April 28, 2006.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	LEIMBACH ASSOCIATES		
Signature	James D. Leimbach		
Printed name	James D. Leimbach		
Date	June 28, 2006	Reg. No.	34,374

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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In re Application of
Horst Rumpf et al.

APPARATUS HAVING A CONTROL CIRCUIT

Serial No. 09/854,393

Filed: May 11, 2001

Confirmation No. 8218

Group Art Unit: 2655

Examiner: Jorge L. C. Ortiz

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Honorable Commissioner of Patents and Trademarks
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Sir:

REPLY BRIEF UNDER 37 C.F.R. § 41.41

This Reply Brief is being filed in response to the Examiner's Answer mailed April 28, 2006.

The Commissioner is hereby authorized to charge any fees associated with the filing of this Reply Brief, including extension fees but excluding issue fees, to Account No. 50-3745, and to credit any overpayments to the same account.

Petition to the Under 37 C.F.R. §1.181

The appellants hereby petition to invoke the supervisory authority of the Director and Designate a New Ground of Rejection for a pending appeal before the Board of Patent Appeals.

This petition seeks supervisory review and there should be no fee charged; however, the Commissioner is hereby authorized to charge any fees associated with the filing of this Petition, including extension fees but excluding issue fees, to Account No. 50-3745, and to credit any overpayments to the same account.

The Examiner's Answer mailed on April 28, 2006 contained a new ground of rejection that was not designated as a new ground of rejection under 37 C.F.R. §41.39.

The rejection of appealed claims 1, 3, 5-9, 12-18 and 20 under the provisions of 35 U.S.C. §103(a) has been obvious over *Hsin et al.* in view of the admitted prior art of *Hsin et al.* The Examiner's Answer mailed on April 28, 2006 states on page 14 that "the examiner provided the Appellant with *extrinsic* evidence made of record, Japanese Publication Number: 62-229403, which teaches that a controller's parameters are adapted during operation." The appellant asserts that this is a new rejection that has not before been presented during the prosecution of this case.

The Final Office Action mailed June 29, 2005, in the first paragraph on page 15 contains a statement that the prior art made of record not relied upon but considered pertinent. The second paragraph on page 15 of the Final Office Action mailed June 29, 2005 contains a statement that Japanese Publication Number: 62-229403 teaches an apparatus having a control circuit and controller, characterized in that an adaptation of the parameters of the feed forward filter arrangement are adapted by an adaptation algorithm during operation. This mentioning of Japanese Publication Number: 62-229403 (along with numerous other references) is not part of any rejection involved in this appeal.

Therefore, the examiner's attempts within the Examiner's Answer to use Japanese Publication Number: 62-229403 creates a combination that the appellant has not had a fair opportunity to respond to. *Hsin et al.* do not mention Japanese Publication Number: 62-229403 and Japanese Publication Number: 62-229403 is not part of the admitted prior art to *Hsin et al.* The appellants request that the use of Japanese Publication Number: 62-229403 in the rejection

of appealed claims 1, 3, 5-9, 12-18 and 20 under the provisions of 35 U.S.C. §103(a) has been obvious over *Hsin et al.* in view of the admitted prior art of *Hsin et al.* as done in the Examiner's Answer be designated as a new rejection under 37 C.F.R. §41.39.

Accordingly, the Examiner's Answer mailed on April 28, 2006 contains a new ground of rejection that was not designated as a new ground of rejection under 37 C.F.R. §41.39. Therefore, the appellants, respectfully request that the above discussed new rejection be designated as a new under 37 C.F.R. §41.39.

The substance of the Examiner's Answer mailed April 28, 2006 in response to the Appeal Brief filed by the appellants on January 31, 2006is addressed below.

I. The rejection of appealed claims 1, 3, 5-9, 12-18 and 20 under the provisions of 35 U.S.C. §103(a) has been obvious over *Hsin et al.* in view of the admitted prior art of *Hsin et al.*

Appealed claim 1

The Examiner's Answer states that *Hsin et al.* teach a feed-forward filter arrangement wherein the parameters of the feed-forward arrangement are adapted by an adaptation algorithm during operation. The appellants, respectfully disagree. *Hsin et al.* teach the attenuation of rotational vibrations on the position of a read/write head. The rotational acceleration of the drive is sensed and applied to an adaptive filter to produce feed-forward signal that is used to offset the rotational vibrations. The adaptive filter adjusts its parameters based on rotational acceleration; position error and an estimate of the transfer function of the actual position signal to the feed-forward signal (see Abstract and col. 2, lines 28-36). *Hsin et al.* at col. 4, lines 28-53 discuss correction of rotational vibrations. The FIR filter F 232 generates a feed-forward signal u_{rv} 234 from rotational vibration measurement W_{rv} 224 to cancel disturbances. The FIR parameter tuning uses both rotational vibration and positional error; however, there is no disclosure or suggestion for the parameters of the feed-forward signal that is produced by the FIR to have its' parameters adjusted during operation. There is no disclosure or

suggestion within *Hsin et al.* for adapting the parameters of the feed-forward filter arrangement and the parameters of the controller by an adaptation algorithm during operation of the apparatus.

Hsin et al. disclose a servo controller (see col. 2, lines 41-54) but make no disclosure or suggestion that the parameters of the controller can be adapted by an adaptation algorithm. It should be noted that the admitted prior art discussed by *Hsin et al.* on col. 2, lines 6-12 states that Kempf used an accelerometer on a compact disc player to control the focus length of the reading lens and that the filtered-x LMS adaptation algorithm was applied to the controller parameters. There is no disclosure or suggestion within *Hsin et al.* for the parameters of the controller are adapted by an adaptation algorithm during operation. Therefore, all the elements defined by the appealed claims are not found in the rejection.

The Examiners Answers in the forth paragraph of page 14 has made a new rejection that is a combination of references by employing Japanese Publication Number 62-229403. This is a new rejection that has been presented to the appellants before during the prosecution of the present application of invention. This should be designated as a new ground of rejection in accordance with the provisions of 37 C.F.R. §41.39.

The examiner in the Examiners Answers on page 13, at the end of the second to last paragraph, states that *Hsin et al.* do not expressly disclose that the parameters of the controller are adapted by the adaptation algorithm. The examiner then states on page 14, last paragraph, that the admitted prior art to *Hsin et al.* (col. 2, lines 6-12 of *Hsin et al.*) clearly and specifically discloses applying an adaptation algorithm to a controller. The appellants, respectfully, assert that the LMS algorithm discussed as prior art by *Hsin et al.* on col. 2, lines 6-12, must be viewed in the context within which it is used i.e. that an LMS adaptation algorithm is used to estimate the value of the single gain and that the single gain is determined **off-line**. The subject matter defined by appealed claim 1 includes that the parameters of the feedforward filter arrangement and the parameters of the controller are adapted by an adaptation algorithm during operation of the apparatus, **not** off-line. There is nothing within *Hsin et al.* that would lead a person skilled in the art to believe that it is possible to adapt the parameter to the controller during operation. The appellants, respectfully, point out that the prior art discussed by *Hsin et al.*

discuss a single gain that is determined off-line and applied to the apparatus. The prior art discussed by *Hsin et al.* do not disclose or suggest the single gain being determined during operation of the apparatus.

The appellants, respectfully, submit that there is no disclosure or suggestion within *Hsin et al.* to apply an adaptation algorithm to the controller. Additionally, there is no disclosure or suggestion within the admitted prior art discussed by *Hsin et al.* to use an adaptation algorithm to adapt the parameters of the controller during operation.

Appealed claims 3, 5, 6, 7, 9, 12, 14, 15, 18, 19 and 20

The Examiner's Answer provides no further arguments to these appealed claims.

Appealed claims 8, 13

Appealed claims 8, 13 define subject matter for the apparatus defines by appealed claim 7 wherein the computational element that performs the adaptation algorithm employs at least one control variable from the controller to adapt parameters of the feedforward filter arrangement and the controller. The Examiner's Answer asserts that this combination is found within *Hsin et al.* combined with the prior art discussed by *Hsin et al.* The appellants, respectfully, point out that the Examiner's Answer does not indicate where all the foregoing elements can be found and only discusses a computational element (230). *Hsin et al.* combined with the prior art discussed by *Hsin et al.* do not disclose or suggest a computational element that performs the adaptation algorithm employs at least one control variable from the controller to adapt parameters of the feedforward filter arrangement and the controller.

Appealed claims 16 and 17

Appealed claims 16 and define subject matter in addition to computational elements. These additional elements were not addressed by the Examiner's Answer.

II. The rejection of appealed claims 2, 4, 10-11 and 19 under the provisions of 35 U.S.C. §103(a) has been obvious over *Hsin et al.* in view of the admitted prior art of *Ferguson et al.* (U.S. Patent No. 5,619,581)

Ferguson et al. (U.S. Patent No. 5,619,581) teaches a noise vibration and cancellation system with the adaptation path and the feedfoward path implemented in separate hardware to reduce the burden on the Digital Signal Processor.

The rejection to appealed claims 2 and 19, asserts that *Ferguson et al.* teaches a control system for cancellation of vibration wherein an adaptation algorithm is executed by a microprocessor and specifically a Digital Signal Processor (DSP). The examiner asserts that *Ferguson et al.* on col. 3, lines 35-66 disclose that an adaptation algorithm is executed by a microprocessor and specifically a DSP. The appellants would, respectfully, point out that *Ferguson et al.* on col. 3, lines 35-66 states that the adaptation weight coefficients are supplied by the DSP and **not** that an adaptation algorithm is executed by the DSP as asserted by the examiner in the rejection. The entire purpose of *Ferguson et al.* is for the adaptation path and the feed forward path to be implemented in separate hardware and specifically not on a DSP (see Abstract and Summary of the Invention of *Ferguson et al.*). The combination of *Ferguson et al.* with *Hsin et al.* would render *Ferguson et al.* unfit for its intended purpose. The entire purpose of *Ferguson et al.* is for the adaptation path and the feed forward path to be implemented in separate hardware and, specifically, not using a DSP. Therefore, the proposed modification stated within the rejection would render the *Ferguson et al.* so modified unsatisfactory for its intended purpose. The combination of *Ferguson et al.* with *Hsin et al.* would change the principle of operation of *Ferguson et al.* so modified.

Appealed claims 4, 10 and 11

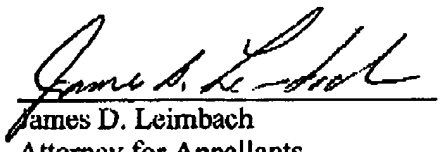
The Examiner's Answer asserts that *Ferguson et al.* teach that teach that an adaptation algorithm is executed by a microprocessor. The appellants would, respectfully, point out that *Ferguson et al.* on col. 3, lines 35-66 states that the adaptation weight coefficients are supplied by the DSP and **not** that an adaptation algorithm is executed by the DSP as asserted by the examiner in the rejection. Therefore, there remain unfound features within the rejected

claims that are not found by the rejection and the rejection does not make a *prima facie* of obviousness.

Conclusion

In summary, the examiner's rejections of the claims are believed to be in error for the reasons explained above. The rejections of each of claims 1-20 should be reversed.

Respectfully submitted,



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PAGE 8/8 * RCVD AT 6/28/2006 11:47:05 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-3/12 * DNIS:2738300 * CSID:5853819983 * DURATION (mm-ss):03-22